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### **Pre-mix Concrete – General Production vs Decorative – Do you know the difference?**

Once upon a time, concrete was a basic utilitarian construction material used to produce structures with a practical purpose in mind and not much consideration given to its appearance. Provided the structure performed as designed, it was generally accepted that the appearance could only be improved using other materials/methods applied or adhered to the concrete after it had hardened.

Things have changed, as they often do, with experimentation that led to improvements in technology. Now, concrete's appearance can be enhanced with the addition of colouring pigments or use of ingredients selected specifically for their natural appearance, and the application of further controls - by the Manufacturer in the first instance, but more so, by the Designer and Builder of the structure to produce an enhanced appearance. Methods of casting and finishing the product have greatly contributed to improvements in the constructed appearance of concrete such as: coloured, exposed aggregate, polished, sand blasted, troweled textures, preformed textures and imprints, to name a few.

Clearly, enhancement of concrete's appearance incurs cost beyond that of traditional concrete and for this reason a pricing distinction has been established between traditional and enhanced concrete (based on the premise: "you get what you pay for").

These days, traditional concrete is often referred to as: "General Production", whilst concrete enhanced with materials/methods, to improve its appearance, is called: "Decorative".

#### General Production Concrete vs Decorative Concrete

Vic Mix defines "General Production Concrete" as a concrete produced specifically without visual controls. Manufacturing Plants employ automation and computerised systems to improve speed of production and reduce cost of manufacture and supply. As a consequence, constituent materials from a variety of sources, with a variety of colours, can be used irrespective of the impact upon the final appearance of the concrete. General Production Concrete is produced in accordance with AS1379 and must meet stringent performance requirements related to: volume, density, and strength. The Manufacturer's primary object is to produce concrete that meets the requirements of AS1379 in the most economical way. AS1379 does not impose any requirements on the products appearance, or consistency of appearance.

Decorative Concrete is also produced in accordance with AS1379, but with the addition of controls that aim to produce a particular appearance in the finished product. These additional controls are not documented or governed by a formal standard and leads to some differences in the way various Manufactures choose to apply controls. Some examples of controls might include: the use of low

ferrite phase cements to improve colour consistency, the use of specialist admixtures to reduce the likelihood and severity of non-structural cracking, the separation of decorative ingredients to separate handling & weighing apparatus that would traditionally been handled together, specialist coarse or fine aggregate sourced from Quarries with their own colour control processes. Receiving and storage of aggregates into static (non-automated) ground bins to enable regular inspection and colour control, mains water in place of conventional reclaim water, the use of specialist equipment/process for appearance enhancing additives (such as: special cements, pigments, etc.), training of staff, cost of monitoring/testing for ingredient inconsistencies (with specific regard to appearance), and isolating materials due to contamination or other visual discrepancies. Despite all these additional controls, it must be stated that there continues to exist sufficient uncontrolled variables that can influence the appearance of finished Decorative Concrete. These variables are beyond the control of Vic Mix. For this reason, Vic Mix (like other Concrete Manufacturers producing Decorative Concrete) must have a “Decorative Disclaimer” to communicate the risks that remain outside their control. The Vic Mix Decorative Disclaimer is available on the internet at <http://www.vicmix.com.au/Vic-Mix-Products/Decorative-Disclaimer.aspx>

## Conclusion

The advent of Decorative Concrete has led some people to assume all concrete should appear a certain way, or a certain colour, or of a certain consistency and the same expectation associated with Decorative Concretes are being applied to General Production Concrete without informing or “checking with” the Manufacture until after completion of the structure when there is a problem with the finished appearance.

From the Manufacturer’s perspective, this is an unfair and unreasonable approach. The price of General Production is reflective of the ingredients, and controls applied in its manufacture. It does not include control over the appearance, of the raw material, with relation to colour, texture, consistency, or any other visual measure. Provided the product is compliant with the mechanical requirements of AS1379 (primarily strength) and can be deemed to be performing adequately in the structure, the Manufacture is of the view that it has supplied what was ordered, and the product is fit for purpose.

In this specific situation, it is Vic Mix’s view that responsibility for the finished appearance rests with the Designer or Builder that has chosen to use General Production Concrete on a project where the finished appearance is important. In this situation, other products & methods should be employed to improve upon the concrete’s appearance by the Designer or Builder responsible.

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